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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,246	04/22/2005	Pierre Gandel	1429-140	7422
24106	7590	11/29/2006		
EGBERT LAW OFFICES 412 MAIN STREET, 7TH FLOOR HOUSTON, TX 77002			EXAMINER PRESTON, ERIK D	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/505,246

Applicant(s)

GANDEL ET AL.

Examiner

Erik D. Preston

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/29/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the N pairs of rotor poles, the stator comprising P x 9 identical poles spaced apart by  $40/P^\circ$ , and said stator poles being grouped consecutively three by three, so as to define a W-shaped circuit, said central stator poles of two W-shaped circuits each corresponding to a phase being angularly spaced apart by  $120^\circ$  must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claim 1 is objected to because of the following informalities: In the 8<sup>th</sup> line of the claim, the phrase "...interruption of the power..." lacks proper antecedent basis and, for examination purposes, will be interpreted as saying "...interruption of a power..." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Regarding claim 11, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear, even in view of the specification, what the variable "P" is meant to represent.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2,5,6,8,11 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083) in view of Huber (US 5041748) in view of Kobayashi et al. (US 4378767).

With respect to claim 1, Hewette teaches a linear actuator comprising: a brushless multiphase synchronous motor having a stator (Fig. 3, #38) and a rotor (Fig. 3, #41) acting on a control organ (Fig. 3, #28) through a driving means for converting, over several revolutions (Col. 5, Lines 24-34) rotational movement into a linear displacement, a springy restoring means (Fig. 3, #53) for systematically restoring the control organ into a reference position in the event of interruption of a power supply to the motor (Col. 4, Lines 37-50), and a control unit (which inherently exists), to control the adjustment of the position of the rotor, but it does not explicitly teach a position detection device contributing, in combination with an electronic control unit, to the control or adjustment of the position of the rotor or an independent reversible reduction device associated with the driving means. However, Huber teaches a linear actuator with a position detection device (Fig. 1, #30,31 & 27) contributing, in combination with an electronic control unit (Fig. 1, #15), to the control or adjustment of the position of a rotor (Col. 5, Lines 31-35) and Kobayashi teaches an actuator with an independent reversible reduction device associated with its driving means (Col. 8, Lines 7-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the actuator of Hewette in view of the position detection and control unit as taught by Huber because it provides a means for controlling the rotation of a motor (Huber, Col. 5, Lines 35-37) and also to modify the actuator of Hewette in view of a

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reduction device such as is taught by Kobayashi because it provides a means for precisely controlling the linear displacement of an actuator (Col. 8, Lines 11-15).

With respect to claim 2, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Hewette teaches that the springy restoring means is comprised of at least one springy element actionable on said rotor to restore the control organ and startable from any position previously imparted by the motor into said reference position.

With respect to claim 5, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Hewette teaches that said driving means for converting the rotational motion of the rotor into a linear movement is reversible.

With respect to claim 6, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Hewette teaches that said driving means for converting the rotational movement of the rotor into a linear movement are comprised of a screw and nut system, the rotor having, at the level of an axial bore, a nut engaged with a coaxial threaded rod indirectly defining the control organ (as seen in Fig. 3).

With respect to claim 8, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 6, and Hewette teaches that the screw and nut system is of the ball screw type with low friction coefficient (as is conventional).

With respect to claim 11, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Huber teaches that said detection device comprises magneto-sensitive elements (Fig. 1, #30 & 31) integrated into the stator (stationary

elements) of the motor, magnetic poles of the rotor (as seen in Fig. 1, adjacent to #30 & 31) being detectable to the elements (Col. 4, Lines 51-55).

With respect to claim 12, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 11, and Huber teaches that said detection device comprises a linear position sensor (Fig. 1, #27) associated with the control organ (Fig. 1, #20).

Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083) in view of Huber (US 5041748) in view of Kobayashi et al. (US 4378767) further in view of Sieber et al. (US 5451824).

With respect to claim 3, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Hewette teaches that said springy restoring means is comprised of a springy element actable on the control organ in order to restore it the control organ and startable from any position imparted by the motor into said reference position, but it does not teach a springy restoring means being actable directly on the control organ. However, Sieber teaches that an actuator can include a springy restoring means (Fig. 1, #15) directly actable on a control organ (Fig. 1, #13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the springy restoring means of Hewette in view of the springy restoring means as taught by Sieber because it provides an equivalent and equally well known means for returning a control organ of an actuator to a reference position (Sieber, Col. 1, Lines 59-65). It also, would have been obvious to one of ordinary skill in the art at the time of the invention to include a springy restoring means directly actable on a control organ of Hewette since it has been held that changing the position of an element of an invention is *prima facie*

obvious in the absence of new or unexpected results (In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)).

With respect to claim 4, Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, and Hewette teaches that said springy restoring means is comprised of a springy element (Fig. 3, #53) actable on the rotor in order to restore it the control organ and startable from any position imparted by the motor into said reference position, but it does not teach an additional springy restoring means being actable directly on the control organ. However, Sieber teaches that an actuator can include a springy restoring means (Fig. 1, #15) directly actable on a control organ (Fig. 1, #13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the actuator of Hewette in view of the springy restoring means as taught by Sieber because as was stated above, it provides an equivalent and equally well known means for returning a control organ of an actuator to a reference position (Sieber, Col. 1, Lines 59-65). It also would have been obvious to one of ordinary skill in the art at the time of the invention to include an additional springy restoring means (such as is taught by Sieber) in the actuator of Hewette since it has been held that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083) in view of Huber (US 5041748) in view of Kobayashi et al. (US 4378767) further in view of Corbett, Jr. et al. (US 6734582). Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 6, but it does not teach said nut carried



by the rotor being mounted movably on a fixed threaded rod so as to be movable according a helical motion, under the stator and having a linear displacement thereof transmittable to the control organ immobilized in rotation my adequate means. However, Corbett, Jr. teaches a ball screw type actuator including a nut (Fig. 3C, #106) carried by a rotor being mounted movably on a fixed threaded rod (Fig. 3C, #103) so as to be movable according a helical motion, and having a linear displacement thereof transmittable to a control organ (Fig. 3C, #119) immobilized in rotation my adequate means (Fig. 3C, #111). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ball screw actuator of Hewette in view of the stationary shaft type ball screw as taught by Corbett, Jr. because it provides and equivalent and equally well-known means for implementing a ball screw linear actuator (Corbett, Jr., Abstract).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hewette et al. (US 4915083) in view of Huber (US 5041748) in view of Kobayashi et al. (US 4378767) further in view Lamb (US 6005317). Hewette in view of Huber in view of Kobayashi teaches the actuator of claim 1, but it does not teach said driving means for converting the motion of the rotor into a linear displacement being comprised of a system of the roller and cam type, the roller being associated with the control organ evolving along a circular cam put into rotation by the rotor. However, Lamb teaches a linear actuator (Fig. 3, #60) with driving means for converting the motion of the rotor into a linear displacement being comprised of a system of the roller and cam type, the roller (Fig. 7, #70) being associated with a control organ (Fig. 3, #78) evolving along a circular

cam (Fig. 3, #63) and put into rotation by the rotor (the roller is put into rotation by the rotor). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ball screw type driving means of Hewette in view of the roller cam type driving means as taught by Lamb because it provides an equivalent and equally well known means for converting rotary motion to linear motion that has the added benefits of being economical and able to maintain a preset speed regardless of load variation (Lamb, Col. 1, Lines 52-59).

***Allowable Subject Matter***

Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 10, while prior art does teach some of the material included in the claim, it does not teach the combination including a first and second cam with crossed profiles and rotatable with a different speed.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3824420, US 5731640, US 6116106, US 6603239, US 6719103 & US 6843239


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



11/21/2006



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